

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:

YUN KEUNG STANLEY TANG

Application No.    Unassigned                      Art Unit:        Unassigned

Filed:                November 19, 2001                      Examiner:      Unassigned

For:                  BATTERY OPERATED  
                          LIGHTING DEVICE

**PRELIMINARY AMENDMENT**

Commissioner for Patents  
Washington, D. C. 20231

Dear Sir:

Prior to the examination of the above-identified patent application, please enter the following amendments and consider the following remarks.

***IN THE SPECIFICATION:***

*Replace the paragraph beginning at page 1, line 8, with:*

An electrical appliance that operates on a rechargeable battery pack requires the use of a battery pack of a specified design and a specified operating voltage. Examples of such electrical appliances are power hand tools, such as drills, and lighting devices, such as torch lights. For promotion, electric hand drills are sometimes sold with a torch light as a gift, in which case the torch light is designed to operate on the same battery pack as the drill.

*Replace the paragraph beginning at page 1, line 18 with:*

In the same series or design, electric hand drills are available in different driving powers, which determine the operating voltage of the battery pack needed. It is therefore necessary to produce torch lights of different operating voltages to go with electric hand drills of the same operating voltage. This complicates the manufacturing, inventory control, and packaging of such products.

*IN THE CLAIMS*

*Replace the indicated claims with:*

1. (Amended) A battery-operated lighting device for use with any one of a plurality of rechargeable battery packs, each battery pack having a pair of terminals and producing a different operating voltage, said battery-operated lighting device comprising:

a casing having first and second casing parts,

a lighting unit including a light bulb located at the first casing part, said light bulb having an optimum operating voltage,

a battery chamber located at the second casing part for receiving at least part of and locating any of the battery packs,

a pair of electrical contacts located in said battery chamber for making electrical connection with respective terminals of any of the battery packs located in said battery chamber, and

an electronic voltage regulating circuit within said casing and having an input and an output electrically connected to said electrical contacts and said light bulb, respectively, said circuit regulating the operating voltage of the battery pack in said battery chamber to substantially the optimum operating voltage of said light bulb, for operating said light bulb.

2. (Amended) The battery-operated lighting device as claimed in claim 1, wherein the chamber has an opening through which a part of any of the battery packs is insertable into said battery chamber, said opening having a periphery with a shape and size

substantially the same as the part of any of the battery packs for locating any of the battery packs in said battery chamber.

3. (Amended) The battery-operated lighting device as claimed in claim 2, wherein said casing has an outer surface forming said battery chamber and lying substantially flush with any of the battery packs when located by said battery chamber.

4. (Amended) The battery-operated lighting device as claimed in claim 1, wherein said casing has a lower end forming part of said battery chamber, said battery chamber having a bottom opening through which a part of any of the battery packs is insertable into said battery chamber, a battery pack in and protruding from said battery chamber acting as a weighted base for said battery-operated lighting device.

5. (Amended) The battery-operated lighting device as claimed in claim 4, wherein said casing has an upper end that supports said lighting unit and a middle section including a handgrip.

6. (Amended) The battery-operated lighting device as claimed in claim 1, wherein said voltage regulating circuit includes an integrated circuit chip producing a substantially constant output voltage that is the optimum operating voltage of said light bulb, irrespective of an input voltage falling within a range.

7. (Amended) The battery-operated lighting device as claimed in claim 6, wherein said voltage regulating circuit includes a feedback loop connected from said output to said integrated circuit chip for indicating the output voltage.

8. (Amended) The battery-operated lighting device as claimed in claim 6, wherein the input voltage is within a range substantially from 9.6V to 18.0V DC.

9. (Amended) The battery-operated lighting device as claimed in claim 8, wherein the operating voltages of the battery packs are substantially 9.6V, 12.0V, 13.2V, 14.4V, 15.6V, 16.8V, and 18.0V.

10. (Amended) The battery-operated lighting device as claimed in claim 1, wherein the optimum operating voltage of said light bulb is substantially 9.3V DC.

*IN THE ABSTRACT*

*Replace the abstract with:*

ABSTRACT OF DISCLOSURE

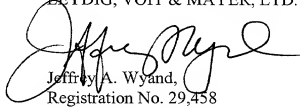
A battery-operated lighting device for use with any one of several rechargeable battery packs, each battery pack having a pair of terminals and a different operating voltage. The lighting device includes a casing having first and second parts, a lighting unit including a light bulb located at the first casing part, and a battery chamber at the second casing part for receiving at least part of and locating the battery packs. The light bulb has an optimum operating voltage. A pair of electrical contacts is located in the chamber for making electrical connection with respective terminals of a battery pack located by the chamber. The casing houses an electronic voltage regulating circuit that has an input and an output in electrical connection with the contacts and the light bulb, respectively. The circuit regulates the voltage of the battery pack to substantially the optimum operating voltage of the light bulb for operating the light bulb.

**REMARKS**

The foregoing amendments are made to correct minor translational errors and to meet United States requirements as to form. No new matter is added.

Respectfully submitted,

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For: BATTERY OPERATED  
LIGHTING DEVICE

AMENDMENTS TO SPECIFICATION, CLAIMS, AND  
ABSTRACT MADE VIA PRELIMINARY AMENDMENT

*Amendments to the paragraph beginning at page 1, line 8:*

~~Electrical~~ An electrical appliance that operates on a rechargeable battery pack requires the use of a battery pack of a specified design and a specified operating voltage. Examples of such electrical ~~appliance~~ appliances are power hand tools, such as drills, and lighting devices, such as torch lights. For promotion, electric hand drills are sometimes sold with a torch light as a gift, in which case the torch light is designed to operate on the same battery pack as the drill.

*Amendments to the paragraph beginning at page 1, line 18:*

In the same series or design, electric hand drills are available in different driving powers, which ~~determines~~ determine the operating voltage of the battery pack needed. It is therefore necessary to produce torch lights of different operating voltages to go with electric hand drills of the same operating voltage. This complicates the ~~manufactory~~ manufacturing, inventory control ~~as well as,~~ and packaging of such products.

*Amendments to the existing claims:*

1. (Amended) A battery-operated lighting device for use with any one of a plurality of rechargeable battery packs, each battery pack having a pair of terminals and producing a different operating voltage, said battery-operated lighting device comprising:

a casing having first and second casing parts,

a lighting unit including a light bulb provided located at the first casing part, said light bulb having an optimum operating voltage,

a battery chamber formed located at the second casing part for receiving at least part of and locating said any one of the battery-pack packs,

a pair of electrical contacts located in the said battery chamber for making electrical connection with respective terminals of said any of the battery-pack packs located by the in said battery chamber, and

an electronic voltage regulating circuit provided within the said casing and having an input and an output in electrical connection with the electrically connected to said electrical contacts and the said light bulb, respectively, said circuit being arranged to regulate regulating the operating voltage of said the battery pack down in said battery chamber to substantially the optimum operating voltage of the said light bulb, for operating the said light bulb.

2. (Amended) The battery-operated lighting device as claimed in claim 1, wherein the chamber has an opening through which said a part of any of the battery-pack packs is insertable into the said battery chamber, said opening having a periphery of with a shape and size substantially the same as that of an adjacent periphery of said the part of any of the battery-pack packs for matching therewith when said locating any of the battery-pack is located by the packs in said battery chamber.

3. (Amended) The battery-operated lighting device as claimed in claim 2, wherein the said casing has an outer surface of the casing forming the said battery chamber is arranged to lie and lying substantially flush with that of said any of the battery-pack packs when said battery pack is located by the said battery chamber.

4. (Amended) The battery-operated lighting device as claimed in claim 1, wherein ~~the said~~ casing has a lower end ~~that forms the forming part of said battery chamber,~~ said battery chamber having a bottom opening through which ~~said a part of any of the battery pack packs~~ is insertable into ~~the said battery chamber,~~ with the rest of said a battery pack in and protruding from said battery chamber acting as a weighted base for ~~the overall torch light~~ said battery-operated lighting device.

5. (Amended) The battery-operated lighting device as claimed in claim 4, wherein ~~the said~~ casing has an upper end that supports ~~the said~~ lighting unit and ~~includes~~ a middle section ~~between the upper and lower ends that is shaped to form an upright including a~~ handgrip.

6. (Amended) The battery-operated lighting device as claimed in claim 1, wherein ~~the said~~ voltage regulating circuit ~~is implemented based on~~ includes an integrated circuit chip ~~to provide producing~~ a substantially constant output voltage that is the optimum operating voltage of ~~the said~~ light bulb, irrespective of an input voltage falling within a ~~predetermined~~ range.

7. (Amended) The battery-operated lighting device as claimed in claim 6, wherein ~~the said~~ voltage regulating circuit includes a feedback loop connected from ~~the said~~ output back to ~~the said~~ integrated circuit chip, ~~which loop is arranged to provide a signal indicative of the level of for indicating the output voltage to enable the chip to maintain the output voltage at a substantially constant level.~~

8. (Amended) The battery-operated lighting device as claimed in claim 6, wherein ~~the predetermined range of~~ input voltage is within a range substantially from 9.6V to 18.0V DC.

9. (Amended) The battery-operated lighting device as claimed in claim 8, wherein the operating voltages of ~~said the~~ battery packs are substantially 9.6V, 12.0V, 13.2V, 14.4V, 15.6V, 16.8V, and 18.0V.



10. (Amended) The battery-operated lighting device as claimed in claim 1, wherein the optimum operating voltage of ~~the said~~ light bulb is substantially 9.3V DC.

*Amendments to the abstract:*

ABSTRACT OF DISCLOSURE

A battery-operated lighting device for use with any one of ~~a plurality of several~~ rechargeable battery packs, each battery pack having a pair of terminals and a different operating voltage. The lighting device ~~comprises~~ includes a casing having first and second parts, a lighting unit including a light bulb ~~provided~~ located at the first casing part, and a battery chamber ~~formed~~ at the second casing part for receiving at least part of and locating ~~said any one the battery pack packs~~. The light bulb has an optimum operating voltage. A pair of electrical contacts is located in the chamber for making electrical connection with respective terminals of ~~said a~~ battery pack located by the chamber. The casing houses an electronic voltage regulating circuit that has an input and an output in electrical connection with the contacts and the light bulb, respectively. The circuit ~~is arranged to regulate~~ regulates the voltage of ~~said the~~ battery pack ~~down~~ to substantially the optimum operating voltage of the light bulb for operating the light bulb.

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For: BATTERY OPERATED  
LIGHTING DEVICE

**PENDING CLAIMS AFTER ENTRY OF PRELIMINARY AMENDMENT**

1. A battery-operated lighting device for use with any one of a plurality of rechargeable battery packs, each battery pack having a pair of terminals and producing a different operating voltage, said battery-operated lighting device comprising:

a casing having first and second casing parts,

a lighting unit including a light bulb located at the first casing part, said light bulb having an optimum operating voltage,

a battery chamber located at the second casing part for receiving at least part of and locating any of the battery packs,

a pair of electrical contacts located in said battery chamber for making electrical connection with respective terminals of any of the battery packs located in said battery chamber, and

an electronic voltage regulating circuit within said casing and having an input and an output electrically connected to said electrical contacts and said light bulb, respectively, said circuit regulating the operating voltage of the battery pack in said battery chamber to substantially the optimum operating voltage of said light bulb, for operating said light bulb.

2. The battery-operated lighting device as claimed in claim 1, wherein the chamber has an opening through which a part of any of the battery packs is insertable into said battery chamber, said opening having a periphery with a shape and size substantially the same as the part of any of the battery packs for locating any of the battery packs in said battery chamber.

3. The battery-operated lighting device as claimed in claim 2, wherein said casing has an outer surface forming said battery chamber and lying substantially flush with any of the battery packs when located by said battery chamber.

4. The battery-operated lighting device as claimed in claim 1, wherein said casing has a lower end forming part of said battery chamber, said battery chamber having a bottom opening through which a part of any of the battery packs is insertable into said battery chamber, a battery pack in and protruding from said battery chamber acting as a weighted base for said battery-operated lighting device.

5. The battery-operated lighting device as claimed in claim 4, wherein said casing has an upper end that supports said lighting unit and a middle section including a handgrip.

6. The battery-operated lighting device as claimed in claim 1, wherein said voltage regulating circuit includes an integrated circuit chip producing a substantially constant output voltage that is the optimum operating voltage of said light bulb, irrespective of an input voltage falling within a range.

7. The battery-operated lighting device as claimed in claim 6, wherein said voltage regulating circuit includes a feedback loop connected from said output to said integrated circuit chip for indicating the output voltage.

8. The battery-operated lighting device as claimed in claim 6, wherein the input voltage is within a range substantially from 9.6V to 18.0V DC.

9. The battery-operated lighting device as claimed in claim 8, wherein the operating voltages of the battery packs are substantially 9.6V, 12.0V, 13.2V, 14.4V, 15.6V, 16.8V, and 18.0V.

10. The battery-operated lighting device as claimed in claim 1, wherein the optimum operating voltage of said light bulb is substantially 9.3V DC.